Double, Two Unpaired Ties, 1:3 Ratio, “3:1 Beiderwand"

Emery Classification

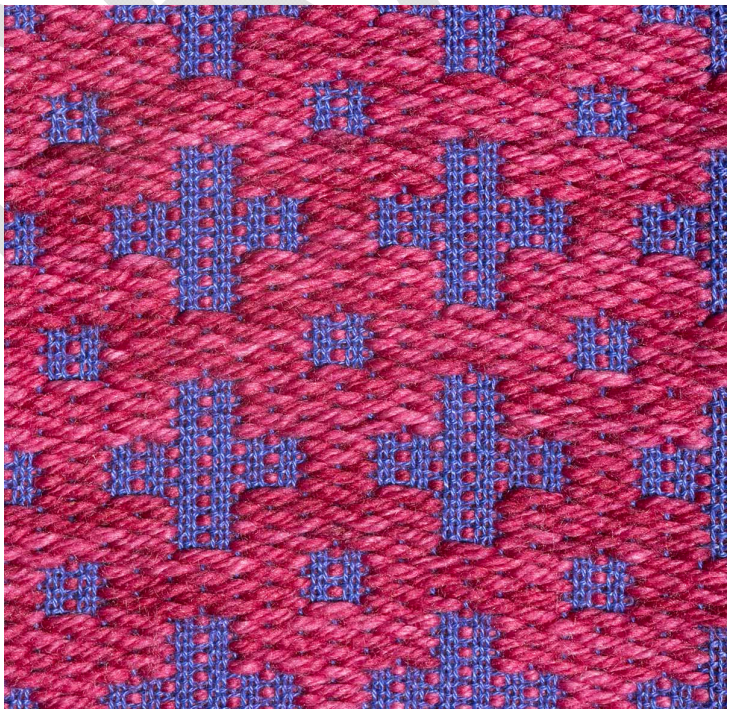
Weave Compounded by Adding Sets of Elements, Supplementary: one warp, two wefts, one of which is not needed for the integrity of the cloth.

Weaving Category

Tied Unit Weave; the supplementary element is an ***additional weft*** which forms blocks of patterning. The structure is a double, two unpaired ties, 1:3 ratio, explained in the drawdown. This structure is sometimes called beiderwand because there are two layers of fabric with the blocks. However, true beiderwand is a double weave, two warps and two wefts. Here there is only one warp. Donna Sullivan cautions against using this name. The German word translates to “two walls”.

Fabric Characteristics

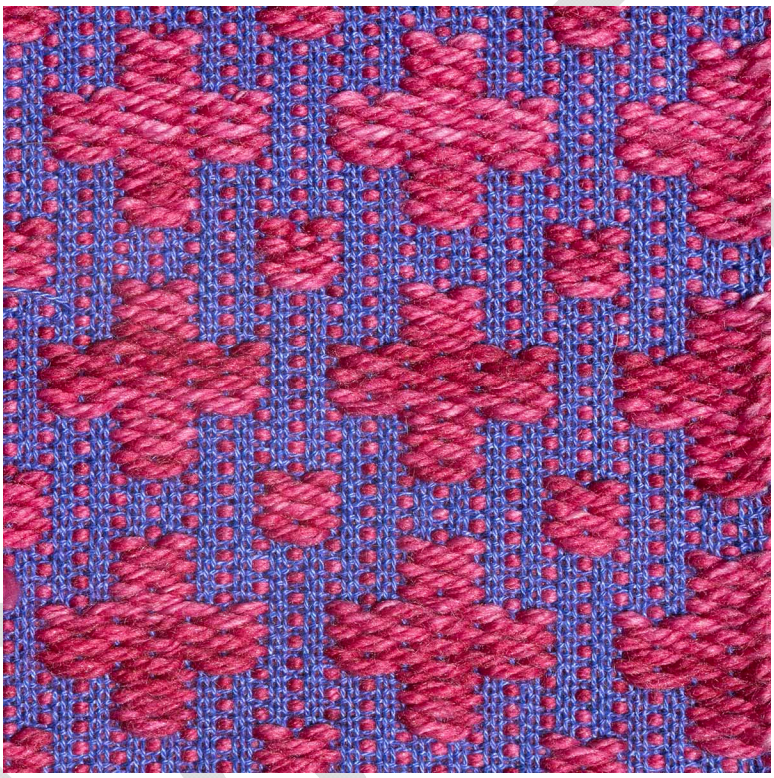
Below is the front of the fabric



The three blocks used to form the motif are organized in pointed order.

As we all supplementary weaves, the fabric is formed by a warp, a ground weft and a supplementary weft. The warp and the ground weft form the ground cloth that gives the fabric its integrity. They are usually the same size, but sometimes the ground weft is smaller. The supplementary weft is usually larger to show the pattern and loftier to pack in the web.

Below here is the back of the fabric.

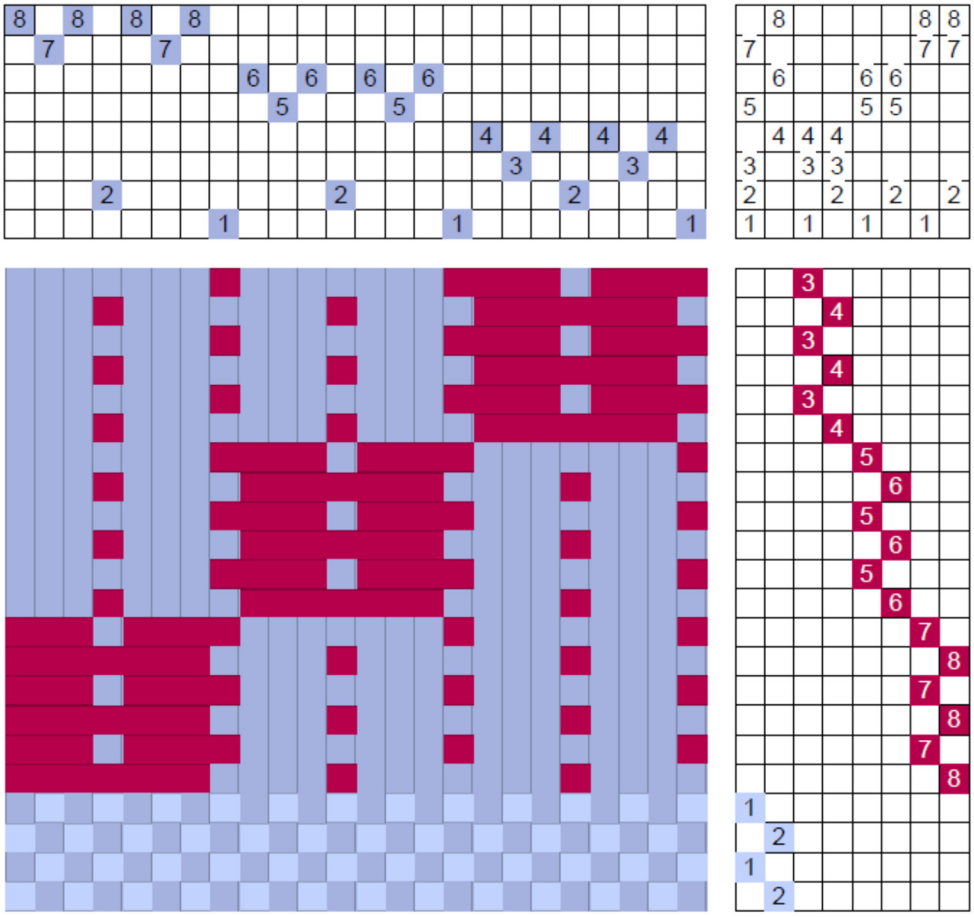


As with other beiderwands, the plain weave that forms underneath the weft blocks is more visible on the back side of the fabric.

Both in the front and the back, the blocks are formed by staggered floats. In addition, the fabric shows a characteristic one thread weft float over the tie threads which is part of the background and is found in other tied unit weaves as well.

Drawdown

The ***sinking shed*** drawdown below shows the three blocks available and explains the nomenclature of the structure: double, two unpaired ties, 1:3 ratio.



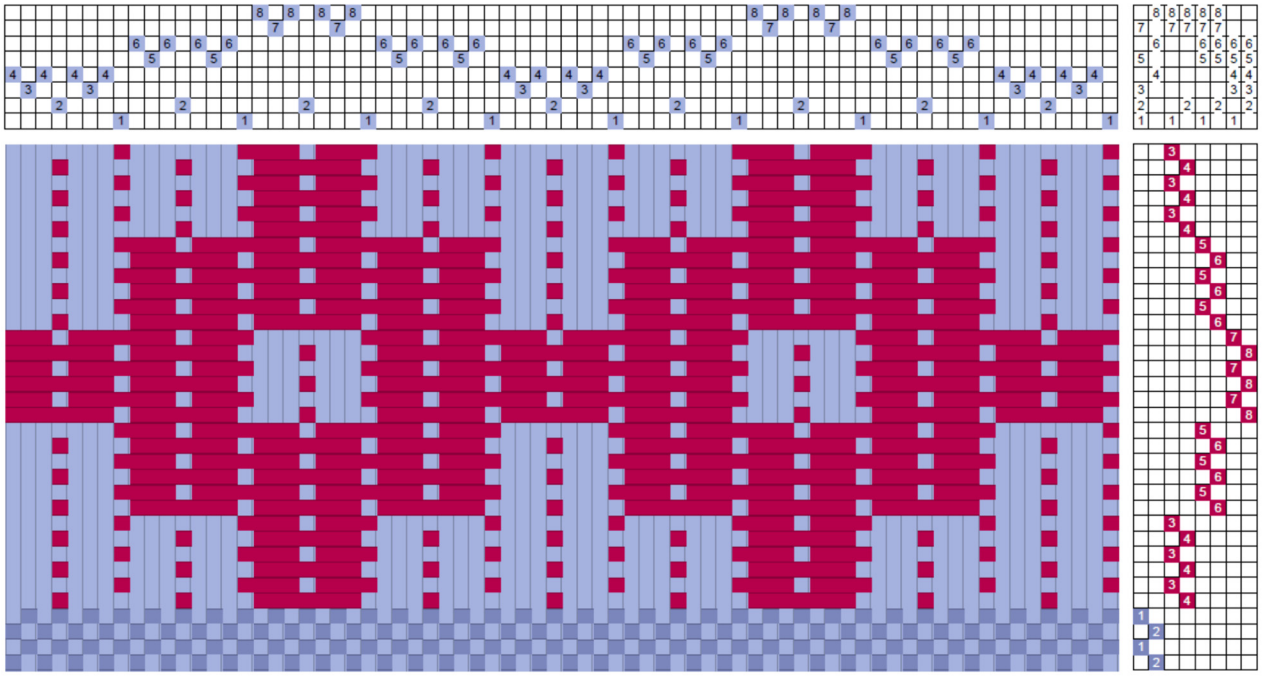
Double refers to the ***two shafts*** per block. There are ***two ties***, shafts 1 and 2. The ties are ***unpaired*** because they are separated by the two pattern shafts. The ratio is 1:3 because there are two ties per block and six pattern threads (not pattern shafts); two to six reduces to 1:3. To obtain the 1:3 ratio, the pattern shafts are organized in a reverse pointed twill with two repeats separated by the tie on shaft 2. Each block starts with the tie on shaft 1.

Not shown in the drawdown is that each pattern pick used in treadling order is followed by one of the tabbies; they intersect with the warp to form the ground cloth.

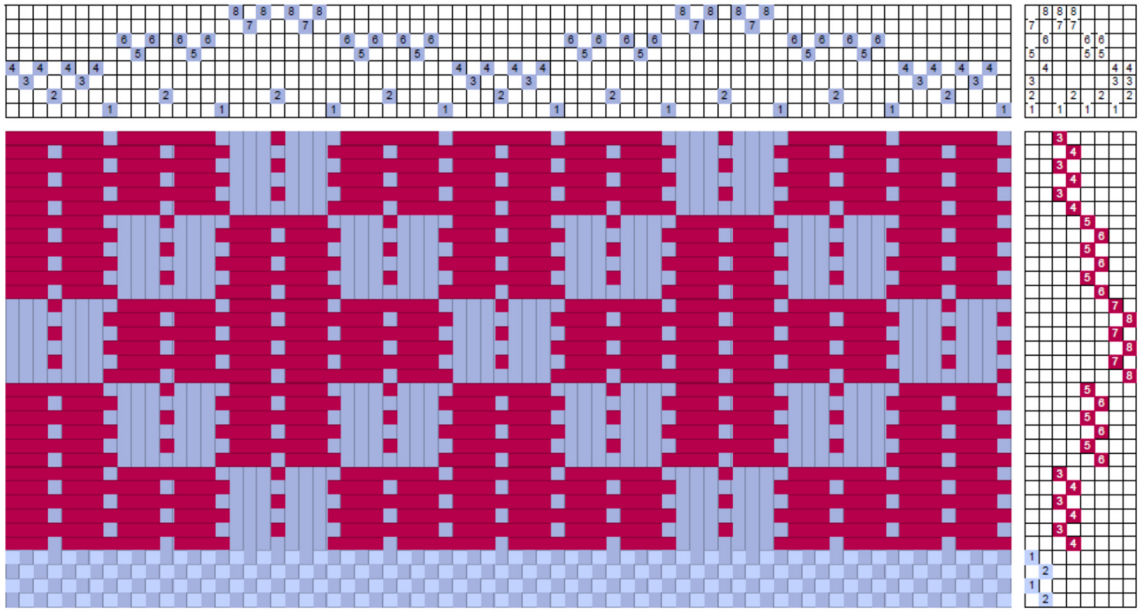
The tabbies for treadling are both tabbies on shafts 1 and 2 plus the odd shafts *vs*. the even

pattern shafts except for tabby shaft 2. This results in the plain weave background, shown in the previous drawdown.

Below is the ***sinking shed*** drawdown that was used to weave the fabric sample. It was adapted from Donna Sullivan's book *Summer & Winter* (see References).

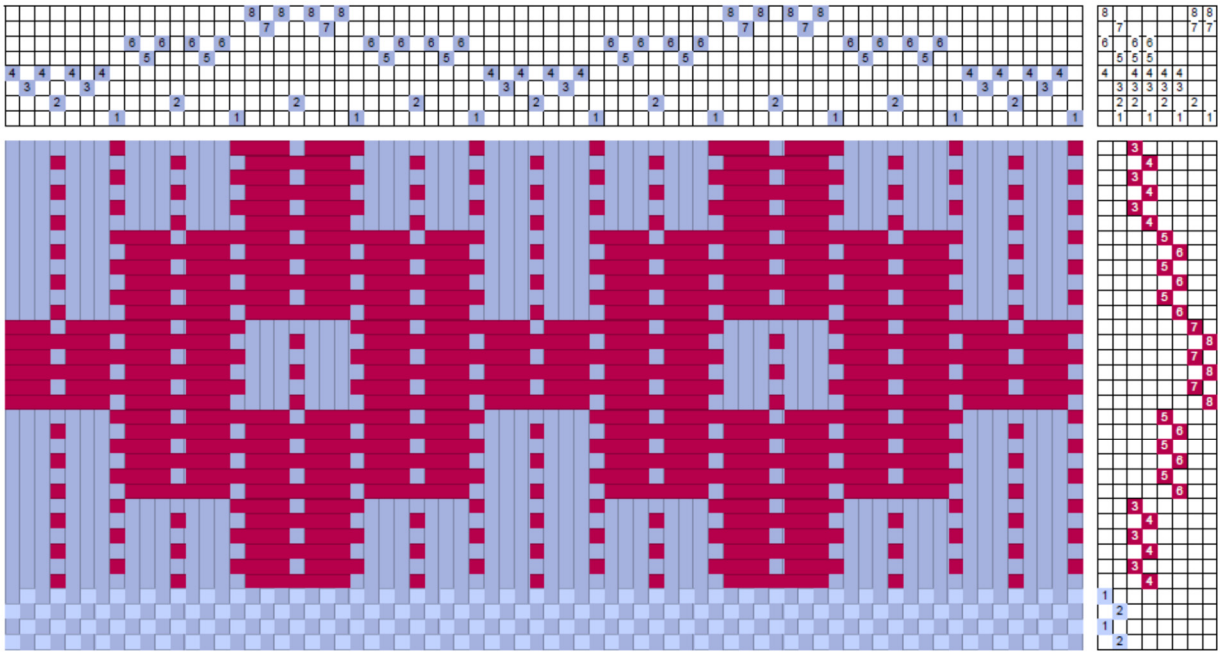


Below is the other side of the fabric, ***rising shed*** drawdown.



The treadling proceeds as follows: block C alone, Blocks B and C together and blocks A and B together, then reversed.

To weave the top of the fabric with a ***rising shed*** loom, the following drawdown can be used.



Function

As we usually find with tied unit weave, this fabric is used for household textiles. However, a single block can have floats as long as over seven warp threads. Thus, appropriate yams size and sett must be used to avoid snagging.

Sett

To allow room for the supplementary weft, the sett should be more open than the one for plain weave. The sample was woven using 10/2 mercerized cotton sett at 18 epi, more open that the 24 epi I may use for plain weave. However, a float with this yarn and sett was over one third of an inch wide, so smaller yarn would be preferable.

Width of Blocks

The width of the block is eight threads. In the fabric sample the blocks are singles arranged in

pointed order. As with all tied unit weaves, blocks can be repeated in the threading and combined in the treadling as shown in the drawdown.

The floats in each block alternate between over four threads and over seven. The floats are delimited by either the warp tie thread on shaft 2 in the middle of the block or the first pattern thread of the adjacent block.

Number of Blocks Available

There are three blocks with eight shafts; two shafts are used for tabbies and shared by all blocks; two shafts are needed for each pattern block. Thus, every additional block requires two additional shafts.

Notes

The "3:1" designation on the Beiderwand name comes from the way true Beiderwand is woven. See the reference by Madelyn Van der Hoogt for the explanation.

References

Emery, Irene. The Primary Structure of Fabrics. Washington, D.C.: The Textile Museum, 1980.

Strickler, Carol (ed.) A Weaver's Book of 8-Shaft Patterns from the Friends of Handwoven. Loveland, CO: Interweave Press, 1991.

Sullivan, Donna. Summer & Winter. A Weave for All Seasons. Loveland, CO: Interweave Press, 1991.

Van der Hoogt, Madelyn. https://handwovenmagazine.com/doubleweave-part-2-beiderwand-and-lampas/, November 24, 2015.